

WHAT IS CLAIMED IS:

1. An anti-icing spray assembly comprising:
a base housing having a generally open top and a cavity, wherein
said base housing is adapted to be mounted in a roadway;
5 a spray housing removably secured to said base housing with at
least a portion of said spray housing being disposed in said cavity of said base
housing, said spray housing defining an interior chamber, wherein said spray
housing is watertight so as to substantially prevent water from entering said
interior chamber, and wherein said spray housing comprises at least one spray
10 outlet adapted to spray an anti-icing agent onto the roadway; and
at least one valve assembly disposed in said interior chamber of said
spray housing, said at least one valve assembly operably connected to said at least
one spray outlet, said at least one valve assembly moveable between a closed
position and an open position, wherein said at least one valve assembly is adapted
15 to permit the flow of the anti-icing agent through said at least one spray outlet and
onto the roadway when moved to said open position.
2. The anti-icing spray assembly of claim 1 wherein said spray
housing comprises at least two spray outlets oriented in opposite directions.
3. The anti-icing spray assembly of claim 1 wherein said spray
20 housing comprises a spray plate defining said at least one spray outlet.
4. The anti-icing spray assembly of claim 3 wherein said spray
housing further comprises a support housing having a recess shaped to receive said
spray plate, wherein said support housing is removably mounted to said base
housing.
- 25 5. The anti-icing spray assembly of claim 4 wherein said support
housing comprises an annular flange fitting over and secured to said top of said
base housing.

6. The anti-icing spray assembly of claim 4 wherein said spray housing further comprises a control housing secured to said support housing in a watertight relationship, wherein said at least one valve assembly is positioned in said control housing.

5 7. The anti-icing spray assembly of claim 6 wherein said control housing comprises an intermediate enclosure secured to said support housing and an end enclosure secured to said intermediate enclosure.

8. The anti-icing spray assembly of claim 6 further comprising an electrical control system disposed in said control housing and operably connected
10 to said at least one valve assembly.

9. The anti-icing spray assembly of claim 8 wherein said electrical control system comprises at least one electrical relay.

10. The anti-icing spray assembly of claim 1 wherein said base housing comprises an FAA approved L-868 light base housing.
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11. An anti-icing spray system comprising:
a roadway having a surface;
a plurality of anti-icing spray assemblies each comprising a base housing, a spray housing and at least one valve assembly, wherein each of said
20 plurality of base housings has a generally open top and a cavity and wherein said plurality of base housings are installed in said roadway so as to not protrude above said surface thereof, wherein each of said spray housings are removably secured to a corresponding one of said base housings with at least a portion of each of said
25 spray housings being disposed in said cavity of said corresponding one of said base housings, said spray housings each defining an interior chamber, wherein each of said spray housings is watertight so as to substantially prevent water from entering said interior chamber thereof, wherein each of said spray housings comprises at least one spray outlet, and wherein each of said at least one valve assemblies is disposed in said interior chamber of a corresponding one of said

spray housings, each of said at least one valve assemblies operably connected to a corresponding one of said at least one spray outlet; and

a fluid conduit communicating with each of said spray housings and operably connected to said at least one valve assembly disposed therein, said fluid
5 conduit supplying an anti-icing agent to said respective spray assemblies, wherein each of said at least one valve assemblies is moveable between a closed position and an open position, wherein each of said at least one valve assemblies permits the flow of said anti-icing agent through said corresponding one of said at least one spray outlets and onto the roadway surface when moved to said open position.

10 12. The anti-icing spray system of claim 11 wherein at least some of said plurality of said spray housings comprises at least two spray outlets oriented in opposite directions.

13. The anti-icing spray system of claim 11 wherein each of said spray housings comprises a spray plate defining said at least one spray outlet.

15 14. The anti-icing spray system of claim 13 wherein each of said spray housings further comprises a support housing having a recess shaped to receive said spray plate, wherein said support housing is removably mounted to said corresponding one of said base housings.

20 15. The anti-icing spray system of claim 14 wherein each of said support housings comprises an annular flange fitting over and secured to said top of said corresponding one of said base housings.

25 16. The anti-icing spray system of claim 14 wherein each of said spray housings further comprises a control housing secured to a corresponding one of said support housings in a watertight relationship, wherein said corresponding one of said at least one valve assemblies is positioned in a corresponding one of said control housings.

17. The anti-icing spray system of claim 16 wherein each of said control housings comprises an intermediate enclosure secured to a corresponding one of said support housings and an end enclosure secured to said intermediate enclosure.

5 18. The anti-icing spray system of claim 16 further comprising an electrical control system disposed in each of said control housings and operably connected to a corresponding one of said at least one valve assemblies, wherein each of said electrical control systems is operable to move a corresponding one of said at least one valve assemblies between said closed and open positions.

10 19. The anti-icing spray system of claim 18 wherein each of said electrical control systems comprises at least one electrical relay.

20. The anti-icing spray system of claim 11 wherein at least some of said base housings comprises an FAA approved L-868 light base housing.

21. The anti-icing spray system of claim 11 wherein said plurality of said anti-icing spray assemblies are arranged in a predetermined spray grid.

15 22. A method of installing an anti-icing spray system in a roadway comprising:

installing a plurality of base housings in said roadway such that said base housings do not protrude above a surface thereof, wherein each of said plurality of base housings has a generally open top and a cavity;

20 inserting a plurality of spray housings into corresponding ones of said base housings, with at least a portion of said spray housings being received in said cavities of said corresponding ones of said base housings; and

removably securing said plurality of spray housings to said corresponding ones of said base housings, wherein each of said spray housings defines an interior chamber and is watertight so as to substantially prevent water from entering said interior chamber, wherein each of said spray housings comprises at least one spray outlet and at least one valve assembly disposed in said interior chamber thereof and operably connected to said at least one spray outlet.

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23. The method of claim 22 further comprising connecting a fluid conduit to each of said spray housings, wherein said fluid conduit supplies an anti-icing agent to each of said respective spray housings.

24. The method of claim 22 wherein at least some of said plurality of
5 said spray housings comprises at least two spray outlets oriented in opposite directions.

25. The method of claim 22 wherein each of said spray housings comprises a spray plate defining said at least one spray outlet.

26. The method of claim 25 wherein each of said spray housings further
10 comprises a support housing having a recess shaped to receive said spray plate, and wherein said removably securing said plurality of spray housings to said corresponding ones of said base housings comprises removably securing said support housings to said corresponding ones of said base housings.

27. The method system of claim 26 wherein each of said support
15 housings comprises an annular flange, and wherein said removably securing said support housings to said corresponding ones of said base housings comprises fitting said annular flange of each of said support housings over said top of said corresponding ones of said base housing and securing said annular flange to said top.

28. The method of claim 26 wherein each of said spray housings further
20 comprises a control housing secured to said support housing in a watertight relationship, wherein a corresponding one of said valve assemblies is positioned in said control housing.

29. The method of claim 28 wherein each of said control housings
25 comprises an intermediate enclosure secured to a corresponding one of said support housings and an end enclosure secured to said intermediate enclosure.

30. The method of claim 28 further comprising providing an electrical control system disposed in each of said control housings and operably connected to said corresponding one of said valve assemblies, wherein said electrical control system is operable to move said corresponding one of said valve assemblies
5 between closed and open positions.

31. The method of claim 30 wherein each of said electrical control systems comprises at least one electrical relay.

32. The method of claim 22 wherein at least some of said plurality of said base housings comprises an FAA approved L-868 light base housing.

10 33. The method of claim 22 further comprising connecting an electrical conduit to each of said spray housings, wherein said electrical conduit supplies electrical power to said respective spray housing.